

CITY OF MOUNTAIN VIEW

REPORT ON BICYCLE BOULEVARDS

PREPARED BY CITY OF MOUNTAIN VIEW BICYCLE/PEDESTRIAN ADVISORY  
COMMITTEE

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## ACKNOWLEDGMENTS

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## INTRODUCTION

The City of Mountain View Bicycle/Pedestrian Advisory Committee is pleased to present this report on Bicycle Boulevards to the Transportation Committee of the Mountain View City Council. In April, 2003, the Transportation Committee initially considered the desirability and feasibility of establishing a “bicycle boulevard” in the City. Given budgetary and resource constraints, the Transportation Committee directed the Bicycle/Pedestrian Advisory Committee (BPAC) to research the issue and to report its findings to the Transportation Committee. BPAC’s charter is to advise the City Council on bicycle and pedestrian issues and concerns in the City, including suggested facility improvements. BPAC also reviews the City’s Bicycle Plan and monitors and makes recommendations regarding the City’s bicycle and pedestrian oriented capital projects.

Researching the feasibility of bicycle boulevards aligns with the one primary goal of the Mountain View Bicycle Transportation Plan, adopted on September 16, 2003, which is:

*“To provide a safe and efficient bicycle network that improves access, eliminates barriers to bicycle travel, encourages automobile trip reduction and promotes cycling as a recreational activity as well as a commute alternative.”*

At the January, 2004 Council Transportation Committee (CTC) meeting the BPAC presented the following overall goals of its bicycle boulevard feasibility study.

- Perform a study of bicycle boulevards and their possible application in Mountain View.
- Provide the CTC and Council complete, clear and useful information to enable making decisions related to bicycle boulevards.
- Provide material for a Bicycle Plan update to be published in late 2006 or early 2007.
- Demonstrate that a Committee can support Staff and Council in tight times by taking on responsibility and delivering useful output.

BPAC began by surveying bicycle facilities in seven other West Coast cities in order to create a working definition of a bicycle boulevard. Using this definition, we identified eight different routes using public streets that could qualify as a bicycle boulevard. Next, we selected one route for further study and analysis. Most of this Report is devoted to describing and illustrating our chosen route and proposed improvements, the reasons for selecting it, and the advantages and disadvantages of designating the route as a bike boulevard. We conclude this Report by making specific recommendations for further action by the Transportation Committee.

## SURVEY OF BICYCLE BOULEVARDS

In conducting its bicycle boulevard survey, BPAC concentrated on West Coast cities that share some characteristics with Mountain View, such as size and population. The cities included in this survey were Berkeley, Burbank, Palo Alto, Santa Barbara and Santa Cruz, California, and Eugene and Portland, Oregon. BPAC members gathered information by Web searches, interviews with transportation and bicycle advocacy groups and, in some cases, by on-the-pavement research. This section summarizes the key features of the bike boulevards and networks in the survey cities.

The following table provides demographic and geographic information from the surveyed cities gathered from the 2000 Census. Although land use varies over different parts of each city, most of the cities have similar population densities, and with the exception of Palo Alto, this is likely to be the case in the future as the cities having lower density grow faster.

	Mountain View	Berkeley	Burbank	Palo Alto	Santa Barbara	Santa Cruz	Eugene	Portland
Land Area (sq. miles)	12.1	10.5	17.4	23.7	19.0	12.5	40.5	134.3
Population	70,708	102,743	100,316	58,598	92,325	54,593	137,893	529,121
Density (persons/sq. mile)	5861.4	9823.3	5782.4	2475.3	4865.3	4356	3403.2	3939.2
Median Age	35	32	36	40	35	32	33	35

***Berkeley, California.*** Berkeley has seven bike boulevards running both North/South and East/West through the City. The boulevards link a number of parks, schools and shopping and employment centers. The boulevards terminate at streets on which continued cycling is relatively safe. Barriers overcome by city planners included objections from some residents that a bike boulevard through their neighborhoods would reduce property values. Useful features of Berkeley's facilities include color signage oriented to bicyclists that includes distances to key destinations and pavement stencils indicating the route as a bike boulevard. Berkeley's bike boulevards are primarily located on public roads on which access is shared with automotive traffic.



**Berkeley's Bike Boulevard Signage**

**Burbank, California.** Burbank addressed the lack of a high quality bike connector between the Chandler and Los Angeles River Bikeways by proposing a 1.9 mile bike boulevard style connector referred to as the Beachwood Bikeway. The Beachwood Bikeway provides a high quality residential bikeway with traffic calming attributes. One example attribute is installation of modified traffic signals at some intersections to allow bicycles to proceed but requiring vehicles to turn. Another example attribute is providing landscaped traffic circles to replace stop signs. This new bikeway project includes providing bikeway and destination signage, stencils and pavement markings, and installation of modified traffic signals at some intersections.



**Burbank's Chandler Bikeway**

**Palo Alto, California.** Palo Alto's bike boulevard runs in a Northwest/Southeast direction for approximately 3.5 miles parallel to both Alma Street and Middlefield Road. It connects to Mountain View in the East (via a bike route) and Menlo Park in the North. The boulevard includes significant improvements that favor bicycles over cars, including cul de sacs and forced turns that prohibit vehicular through traffic, but permit bicycle through traffic, the removal of stop signs for most through traffic, and the addition of stop signs on streets crossing the boulevard. For this reason, none of the route is striped for Class II bike lanes. The boulevard includes limited signage, although without the destination and mileage information that other cities' boulevard signage contains. Palo Alto has an extensive plan for additional bicycle boulevards (refer to the Palo Alto Transportation Plan). See [Appendix B](#) for additional Palo Alto information.



**Palo Alto's Bicycle Boulevard Signage**

**Santa Barbara, California.** Santa Barbara has not designated a bike boulevard per se, but instead has established a comprehensive bike network that includes multiple North/South and East/West routes connecting Downtown, the University of California and the beach, and provides access to a number of retail and commercial areas. Extensive signage indicating distances to destinations, wide Class II bike lanes, and bike paths closed to vehicular traffic also characterize the routes. Finally, the network includes bicycle and pedestrian bridges over Highway 101, which similar to Mountain View, serves as a barrier for cross-town non-automotive travel. Much of the network is located on public roads open to automobiles and generally does not involve significant traffic calming improvements.



**Santa Barbara's Bike Network Signage**

**Santa Cruz, California.** Santa Cruz also has addressed boulevards in the context of a bicycle network. By analyzing typical origins and destinations of bicyclists (the University of California, the Boardwalk area and the Pacific Avenue Mall area), city planners identified arterial streets for which additional striping and bicycle oriented improvements were most critical for bicyclist convenience and safety. The entire network is located on public roads shared with automotive traffic, although the city is currently implementing a two-way, separated grade bike lane on Beach Street, along the Boardwalk. The city is also planning to designate a portion of King Street, which runs parallel to Highway 1 and connects residential areas to the University of California, as a formal bicycle boulevard.



**Santa Cruz's Beach Street bi-directional bike lane on one way street**

**Eugene, Oregon.** Eugene's bike boulevard system is characterized by paved, bicycle-only paths through and around the city and connecting to the University of Oregon. The portions of the bike boulevard system that are open to automobile traffic are generally biased towards bicycles through the use of traffic calming improvements such as existing cul de sacs, traffic circles, and raised crosswalks. Eugene's approach is generally more suited to a university town in which significant portions of the population are students and a correspondingly large number of trips are between campus and residential areas.



**An example of Eugene's Traffic Calming Facilities**

**Portland, Oregon.** Portland is the largest of the surveyed cities and is often recognized for the quality of its bicycle facilities. Portland's bicycle boulevard network incorporates about 29 miles of public roadways, with planned improvements expected to increase that amount to 66 miles in the next 5 years. The network was planned in order for a bicycle-friendly route to fall within one-quarter to one-half a mile away from any point in the city. The network incorporates extensive destination and mileage signage and gives priority to bicyclists on a number of roadways.



**Portland Signage**



## DEFINITION OF BICYCLE BOULEVARD

Based on our survey, we have made a number of conclusions about designating bicycle boulevards in the City:

- The most effective bike boulevards are low traffic volume roads, parallel to major arterial streets, on which all types of vehicles are allowed, but that also include improvements to enhance bicyclist safety and convenience;
- Cities do not typically create dedicated bike boulevards, but rather establish bicycle friendly routes as part of a network of bicycle lanes and routes;
- Analyzing origins and destinations of typical cyclists and users is important to choosing the best route or routes to designate as a bike boulevard;
- The most valuable bike boulevards connect to other bike routes within a city and neighboring cities' bike facilities;
- Signage and pavement markings create awareness, assist navigation, and are a key element of successful bike routes and boulevards;
- Bicycle boulevards can be economical to create when designated on public roads shared by automobiles and without significant traffic calming measures; and
- In some situations the goals of bicycle boulevard and traffic calming improvements can be complementary.

While traffic calming and diversion measures, such as those incorporated in the Palo Alto bicycle boulevard, create the most convenience for bicyclists, such measures can lead to stiff community opposition. Additionally, city planners in some of the survey cities stated that proposals to create dedicated bicycle paths through residential areas generated significant public resistance. In most situations a bicycle boulevard is a relatively low cost improvement as compared to a separated bicycle pathway such as the Stevens Creek Trail.

BPAC advocates taking a consultative and cooperative approach with residents along the route of a potential bicycle boulevard. In this way, we believe local residents would become supportive of the project, the boulevard could be completed more quickly and at lower cost, potentially increasing use and interest.

With these conclusions in mind, we propose adopting the following definition of a bike boulevard. This definition is highly leveraged from the Valley Transportation Authority (VTA) Bicycle Technical Guidelines:

The following treatments on a residential or local street will provide a very convenient, efficient, and safe through route for all types of bicyclists:



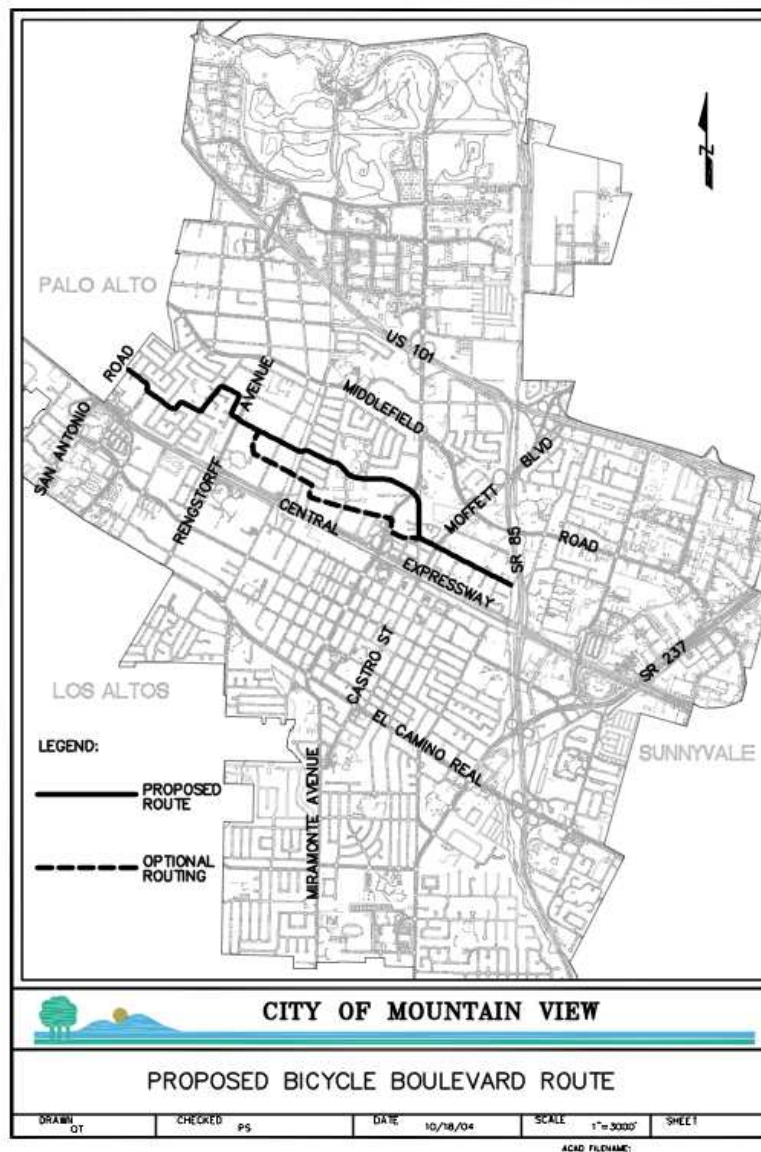
1. Installing traffic control devices so that bicyclists can easily cross major streets and arterials.
2. Whenever possible, STOP signs are positioned so that the bicycle boulevard has the right of way.
3. If necessary, installing traffic calming measures, such as traffic circles or semi-diverters, in selected locations to ensure that motor vehicles do not divert to the bicycle boulevard.
4. Installing signage oriented to bicyclists that includes distances to key destinations and pavement stencils indicating the route as a bike boulevard.

Residential or local streets meeting the following conditions are optimum locations for Bicycle Boulevards:

- Existing low vehicle volumes
- Very little commercial frontage
- Parallel and reasonably close to a major arterial or a high traffic collector street
- Not a transit or truck route
- Provides connection to major locations within the city and to adjacent cities
- Reasonably contiguous with few jogs

## POTENTIAL MOUNTAIN VIEW BICYCLE BOULEVARDS

Using the definition above, BPAC researched eight possible bicycle boulevard routes within the City. Our routes were intended to connect major origins and destinations within the City, including Downtown and the Downtown Transit Center, San Antonio Shopping Center, Shoreline Park, the Stevens Creek Trail and Cuesta Park/Blossom Valley Shopping Center. We also endeavored to propose routes that connect to bike routes of Sunnyvale, Los Altos and Palo Alto, as neighboring cities. These routes are described in [Appendix A](#). Following discussion of these routes, BPAC chose one route to study in detail and to propose to the Council Transportation Committee for implementation. This chosen route, referred to as the “Mayfield to Downtown/Stevens Creek Trail route”, is highlighted in the map below and described in the next section.



## MAYFIELD TO DOWNTOWN/STEVENS CREEK TRAIL BICYCLE BOULEVARD PROPOSAL

BPAC choose the Mayfield to Downtown/Stevens Creek Trail route as its primary route for further study and action. Traveling almost 3 miles, this route begins at the intersection of San Antonio Road and Nita Avenue, follows low volume residential streets parallel to and located between Central Expressway and Middlefield Road, and terminates at the Stevens Creek Trailhead on Central Avenue near Downtown.

There are alternatives for the alignment between Rengstorff Avenue and Shoreline Boulevard. One alternative is for the route to travel Montecito Street, crossing Shoreline at Stierlin along with other vehicular traffic. The other alternative is for the route to run along Hackett Street and Wright Avenue, crossing Shoreline Boulevard at Wright. This alignment would provide a bicycle-only crossing of Shoreline potentially enhancing bicyclist convenience and safety.

The reasons for choosing the route, the principal features of the route, as well as a discussion of the two alternative alignments, are included below.

### **Reasons for Choosing Route**

BPAC chose the Mayfield to Downtown Route due to the large number of origins and destinations served by the route, adjacency to major arterial streets, connections to the Palo Alto Bicycle Boulevard, Stevens Creek Trail, and the newly improved Evelyn Avenue route leading to Sunnyvale, and relatively low traffic volumes. The route overall, including the two alternate alignments, requires few traffic improvements. In general this proposed route aligns well with our adopted definition of a bicycle boulevard.

***Origins/Destinations Served.*** Significant origins and destinations served by the route include:

- Possible future Mayfield housing development;
- San Antonio CalTrain Station;
- Monta Loma, Stevenson and Jackson Parks;
- Monta Loma and Theuerkauf Schools;
- Bailey Park shopping center;
- Downtown and the Transit Center; and
- Stevens Creek Trail.

***Connections to Other Cities' Bicycle Networks.*** The proposed route recognizes the need for bike networks to be organized on a regional, not municipal level, to accommodate bicyclists who transit the City on their way to home or work in Palo Alto, Sunnyvale and other communities. Specifically, the northwest terminus of the proposed route is aligned with the southeastern tip of the Palo Alto Bryant Street Bicycle Boulevard. In this way, a tight linkage of the two networks could be possible in the future.

***Adjacency to Major Arterials, Low Traffic Volumes.*** As illustrated in the table below, traffic volumes on the proposed route fall well below Middlefield Road and Central Expressway (the current routes used by bicyclists traveling East/West through the City) thus enhancing bicyclists safety. By comparison Middlefield Road, one of the nearby major arterial streets, carries between 17,000 and 20,000 vehicles per day. The proposed bicycle boulevard route is located approximately one-half mile from Middlefield Road and Central Expressway. All traffic volume information was provided by Dennis Belluomini.

<b><i>Bike Boulevard Street</i></b>	<b><i>Vehicles per day (vpd)</i></b>
Montecito Avenue	3700 average (varies from 2500-5500)
Wright Avenue	3000
Stierlin Road	3900
Central Avenue	2000 estimated
Hackett Street	1100

***Disadvantages.*** While we believe that the proposed route offers the best combination of origins and destinations, safety and attractiveness, the route has a number of disadvantages. In order to reach Downtown and the Downtown Transit Center using the proposed route, bicyclists must travel on Moffett Boulevard and then cross Central Expressway. This area has heavy automotive traffic and suffers from narrow or non-existent bicycle lanes. The alternative, to continue along the proposed route to the Stevens Creek Trail and then exit the trail at Evelyn Avenue, would add approximately one mile to a downtown Mountain View destination. In addition, access to the San Antonio Caltrain station and Palo Alto could be impacted by the pending development of the former Hewlett-Packard site, and any associated roadway realignments.

### **Implementing Improvements**

Implementing improvements along the proposed bicycle boulevard can be achieved via a tiered approach beginning with basic improvements such as signage (tier 1), followed by minor traffic calming elements such as narrow median islands and turn restrictions (tier 2), and concluding with more drastic changes such as speed humps or partial closures (tier 3). Each tier involves escalating costs and neighborhood involvement. Refer to the section describing the surveyed cities for examples of signage incorporating mileage and destination information.

As mentioned above, BPAC identified signage directed specifically at bicyclists as a key element of successful bicycle boulevards. Such signage typically shows mileage to key destinations (i.e. “Downtown Mountain View – 1.3 miles”) in addition to providing directional assistance as shown in the Portland, Berkeley, and Santa Barbara pictures. While intra-city mileage markers are irrelevant to motorists who cover the smaller distances within a city the size of Mountain View in a short time,



**Charleston Destination Signage**

bicyclists are acutely aware of distances of one mile or less. Signage directed at bicyclists reminds them that they are legitimate and encouraged users of City roadways. Such signage also serves to identify the bicycle boulevard to non-bicyclists, increasing motorists' awareness of bicyclist use of public roads and hopefully spurring some to try out the route on a bicycle.



**Montecito  
Bike Route  
Signage**

Signage can be mounted on dedicated poles or attached to existing signs or lamp poles, as shown in the picture at the left of a bike route sign along Montecito. Consideration of nearby vegetation is critical to avoid signs being obscured over time due to plant growth. Some effort should be made to avoid “sign clutter” when signs identifying the bicycle boulevard are integrated with parking, speed limit and other existing signs. BPAC believes signage to be fairly cost effective at \$200-\$250 per sign which includes installation costs.

### **Detailed Route Description**

The two described alignments of the proposed bicycle boulevard route are referred to as the Montecito and Hackett-Wright alignments. Both route alignments begin at the intersection of San Antonio Road and Nita Avenue, providing connection to the Palo Alto bicycle boulevard route. The routes are initially the same as they flow through the former Hewlett-Packard site (aka Mayfield Mall) and the Monta Loma neighborhood. Both route alignments end at the Stevens Creek Trail at the end of Central Avenue. Divergence between the two route alignments occurs in their middle section. All distances provided are estimates gathered from bicycling the route.

Improvement is needed at the intersection of San Antonio Road and Nita Avenue to enhance bicycle travel across San Antonio Road. Currently a bicyclist traveling northwest from the Mayfield site across San Antonio must travel across the lane of traffic going the opposite direction to obtain access to a pedestrian facility to trigger the traffic light. This portion of the bicycle route is in Palo Alto and can not be improved without cooperation from Palo Alto.

Other improvements are noted in the tables detailing each alignment of the route. Adequate bicycle facilities at the crossings of major intersections are especially important to ease travel along the route. At a minimum these intersections must provide adequate bike pavement stencils and traffic light sensors. As this picture of the intersection of Jewel and Rengstorff shows improvements are needed at some intersections.



**Missing stencil and sensor at Jewel and  
Rengstorff**

The following table details the Montecito Alignment.

<i><b>Location</b></i>	<i><b>Crossing or Turn</b></i>	<i><b>Distance To Next Location (in miles)</b></i>	<i><b>Aggregate Distance (in miles)</b></i>	<i><b>Notes</b></i>
San Antonio and Nita	None	0.12	0	Start.
Nita STOP sign	Cross	0.1	0.12	3-way STOP at Nita.
Mayfield and Whitney	Left	0.19	0.22	3-way STOP at Mayfield/Whitney. Need to improve visibility of speed bumps.
Whitney and Laura	Left	0.16	0.41	
Laura and Thompson	Left	0.18	0.57	4-way STOP at Thompson.
Thompson and Jane	Right	0.1	0.75	Passes Monta Loma School and Park. STOP on Jane at Thompson but traffic on Thompson does not stop.
Jane and Fay Way	Right	0.12	0.85	
Fay Way and Jewel Ave	Left	0.04	0.97	
Jewel /Montecito and Rengstorff	Cross	0.26	1.01	Traffic light at Rengstorff. Bike pavement stencil and sensor needed for lane traveling across Rengstorff in both directions.
Montecito and Sierra Vista	Cross	0.13	1.27	Bike route signage exists. 4-way STOP at Sierra Vista.
Montecito and Farley	Cross	0.16	1.4	Bike route signage exists. 4-way STOP and traffic circle at Farley.
Montecito and Burgoyne	Cross	0.13	1.56	4-way STOP at Burgoyne.
Montecito and Granada	Cross	0.09	1.69	Passes Stevenson Park and Theuerkauf School. 3-way STOP at Granada. This section can be congested with parked cars.
Montecito and San Pierre / Poppy	Cross	0.27	1.78	Bike route signage exists. 4-way STOP at San Pierre / Poppy.
Montecito/Stierlin and Shoreline	Cross	0.25	2.05	Bike route signage exists. Passes Bailey Shopping Center. Traffic light at Shoreline. Bike pavement stencil and sensor needed for lane traveling across Shoreline in both directions.

Stierlin and Central Avenue	Left	0.1	2.3	Bike route signage exists. 4-way STOP at Central Avenue.
Central Avenue and Moffett	Cross	0.45	2.4	Traffic light at Moffett. Adequate bike sensors and pavement stencils for crossing Moffett.
Stevens Creek Trail at end of Central Avenue	None	0	2.85	Trail entrance is very visible. End.

The following table details the Hackett-Wright Alignment.

<i><b>Location</b></i>	<i><b>Crossing or Turn</b></i>	<i><b>Distance To Next Location (in miles)</b></i>	<i><b>Aggregate Distance (in miles)</b></i>	<i><b>Notes</b></i>
San Antonio and Nita	None	0.12	0	Start.
Nita STOP sign	Cross	0.1	0.12	3-way STOP at Nita.
Mayfield and Whitney	Left	0.19	0.22	3-way STOP at Mayfield/Whitney. Need to improve visibility of speed bumps.
Whitney and Laura	Left	0.16	0.41	
Laura and Thompson	Left	0.18	0.57	4-way STOP at Thompson.
Thompson and Jane	Right	0.1	0.75	Passes Monta Loma School and Park. STOP on Jane at Thompson but traffic on Thompson does not stop.
Jane and Fay Way	Right	0.12	0.85	
Fay Way and Jewel Ave	Left	0.04	0.97	
Jewel /Montecito and Rengstorff	Cross	0.13	1.01	Traffic light at Rengstorff. Bike pavement stencil and sensor needed for lane traveling across Rengstorff in both directions.
Montecito and Montebello	Right	0.13	1.14	Bike route signage exists. Montebello has a STOP sign at Montecito.
Montebello and Hackett	Left	0.1	1.27	
Hackett and Sierra Vista	Cross	0.16	1.37	STOP sign on Hackett both directions. Traffic does not stop on Sierra Vista.



Hackett and Farley	Cross	0.1	1.53	4-way STOP and traffic circle at Farley.
Hackett and Beatrice	Right	0.06	1.63	
Beatrice and Wright	Left	0.19	1.69	Wright has a YIELD sign at Beatrice.
Wright and Granada	Cross	0.25	1.88	4-way STOP at Granada.
Wright and Shoreline, onto path along Shoreline	Cross	0.1	2.13	Adequate bike sensor and pavement stencil for crossing Shoreline.
Path and Jackson, off path onto Jackson	Left	0.16	2.23	Need path and Jackson access improvements including ramp off path onto Jackson.
Jackson and Stierlin	Left	0.04	2.39	STOP sign on Jackson both directions. Traffic on does not stop on Stierlin.
Stierlin and Central Avenue	Right	0.09	2.43	4-way STOP at Central Avenue.
Central Avenue and Moffett	Cross	0.45	2.52	Traffic light at Moffett. Adequate bike sensors and pavement stencils for crossing Moffett.
Stevens Creek Trail at end of Central Avenue		0	2.97	Trail entrance is very visible. End.

### **Discussion of Hackett-Wright versus Montecito Alignment**

There are two close but distinct routes available through the center portion of the proposed bike boulevard. We refer to these alignments as Montecito and Hackett-Wright. The two routes are shown on the main boulevard map and are detailed above.

The Montecito route proceeds east along Montecito, following that road through the residential neighborhood, first past apartments and then single family homes. It crosses Burgoyne and then proceeds with Stevenson Park and Theuerkauf School on the left. Continuing east it passes a block of apartments and then comes to the Bailey Shopping Center on the left and then the signalized intersection with Shoreline Blvd. On the other side of Shoreline, it merges with Stierlin, passing across the Hetch Hetchy right of way, and finally ends with a left turn onto Central Avenue.

The Hackett-Wright route diverts from Montecito with a right turn onto Montebello, then follows a left turn as the main road turns into Hackett. The route follows Hackett and crosses Sierra Vista and Farley before reaching Bonny and then Beatrice, where it turns right. After a short stretch on Beatrice, the route turns left on Wright. Wright is followed through and out of the residential area and into the small industrial area west of Shoreline. Wright terminates with a signal at Shoreline. At this point, the route crosses Shoreline, enters and proceeds south on a path on the east side of

Shoreline, and then turns left through a city-owned right-of-way onto Jackson. It proceeds along Jackson, and then to Central Avenue.

Other variations on these two alternatives are possible, with several cross streets (Sierra Vista, Burgoyne, Granada) connecting Montecito and Hackett or Wright.

The following table summarizes key features of each alignment.

<b><i>Consideration</i></b>	<b><i>Montecito</i></b>	<b><i>Hackett-Wright</i></b>
<b><i>Origins/Destinations</i></b>	Theuerkauf School, Stevenson Park, Bailey Park Shopping Center	Jackson Park
<b><i>Traffic Volume</i></b>	Maximum 5500	Maximum 3000
<b><i>Width of Streets</i></b>	32-44 feet	32-50 feet
<b><i>Number of parked Cars</i></b>	Moderate	Low
<b><i>Stop Signs / Protection/Signals</i></b>	All cross traffic stops	Cross traffic does not stop (one instance) and does not stop for bikes headed west (one instance)
<b><i>Off-Street Routing</i></b>	None	300 feet along Shoreline to Jackson
<b><i>Bus Route</i></b>	Yes (Route 34)	Yes (Route 34)
<b><i>Adjacent Housing</i></b>	Multi-family and single family	Multi-family and single family
<b><i>Other Considerations / Future (land) use</i></b>	Possible tie to future Hetch-Hetchy Trail	Connection to path along east side of Shoreline across railroad tracks and Central Expressway

The basic tradeoffs between the two routes are as follows: The Montecito route is straighter, has more destinations, and a cleaner signalized crossing of Shoreline; the Hackett-Wright route has wider streets, less traffic, fewer parked cars and a connection to the path on the east side of Shoreline near Central Expressway. The Shoreline Ave. crossing is the most important feature distinguishing the two routes.

The Montecito route has a regular signalized intersection at Shoreline. Shoreline is relatively narrow at this crossing, presenting bicyclists with an opportunity to cross safely despite a short signal cycle. It lacks a specific lane or slot for bicycles, but there are detectors with stencils. The crossing heading east is different from the transit heading west, with bicyclists being more exposed going west to traffic entering and exiting the shopping center.

Wright terminates at a signalized intersection at Shoreline, and bicycle access through and across Shoreline is less straightforward. An apartment complex entrance faces Wright across Shoreline, and vehicles exiting that complex benefit from the signal. The boulevard alignment would take bicyclists off the road onto a path for approximately 300 feet.

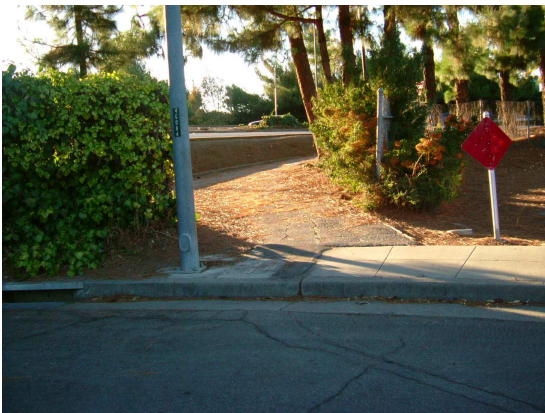
Approaching from the west along Wright, a bicyclist could trigger the signal in the left turn lane and then proceed straight across Shoreline to the path on the east side. Alternatively, the bicyclist could push the pedestrian walk button and use that protection

to cross. Approaching from the east, the bicyclist must use the pedestrian walk signal. A future option would be to provide an island-protected slot for bicyclists heading east. Bicyclists who currently use the pedestrian walk signal would then feel more comfortable with a pavement mounted sensor that could result in a shorter delay for Shoreline through traffic.

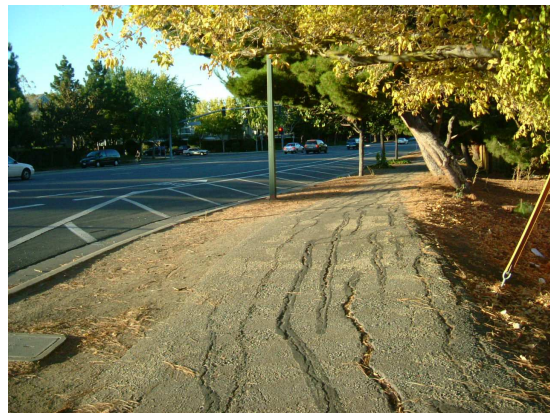
The path connecting from the Wright terminus to the Jackson terminus on the east side of Shoreline is currently 8 feet wide. The path continues past the Jackson terminus, broadening to 10 feet wide at points. It runs roughly parallel to Shoreline across Central Expressway and the railroad tracks to Villa and is used by pedestrians and bicyclists. The Jackson terminus, and a large amount of the space between Jackson and Shoreline is city-owned land. Currently the path narrows to 6 feet wide at the connection to Jackson.

It is likely that the path would have to be wider to allow both two-way bicycle traffic and pedestrian traffic. Several pine trees border the Wright-to-Jackson segment of the path on its east side. They limit the width of the path and their roots cause rough spots in the path. With the trees in place, widening towards Shoreline may be more feasible. There is 6-7 feet of space between the edge of the path and the Shoreline Blvd. curb. The merge of traffic from Central Expressway to Shoreline north also includes a stretch of pavement that is diagonally striped indicating it is not intended for normal through traffic.

The differences in Shoreline crossings mean that the Montecito routing could be implemented more directly and at lower cost. Further study of the alternate alignments is required to determine which is preferred based on the factors identified here and others. See the photos below of the current path connecting Jackson and Shoreline.



**Path Access from Jackson, Need Ramp**



**Path Along Shoreline, Wright on Left, Needs Improvement**

### **Other Issues to Consider**

***Unknown neighborhood reaction.*** While BPAC believes that designation of a street as a bicycle boulevard should enhance its attractiveness, usability and potentially increase property values (as bicycle travel produces no noise or pollution), it is difficult to gauge neighborhood reactions in advance. It is likely that proposing roadway improvements that would favor bicyclists, such as cul de sacs, would generate significant

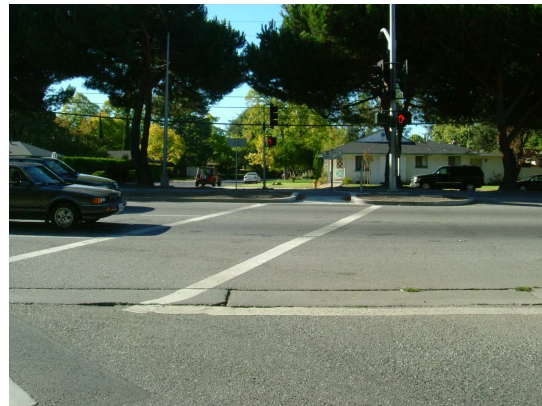
neighborhood opposition and, for that reason, are not being recommended. Communicating early and often with the residents of streets through which the proposed route passes will be critical to securing their approval and support of the project.

***Potential Mayfield Easement.*** BPAC has aligned the route around the current Hewlett-Packard site, which is undergoing development. Currently there is public access through this site connecting Whitney Street and Nita Avenue. This public access provides bicyclist access to the Monta Loma neighborhood at the beginning of the proposed route. While we understand negotiations are underway with the property owner, we believe retaining public access to Whitney Street enhances the proposed boulevard and would guarantee access from the boulevard to the San Antonio Caltrain Station.

***San Antonio Road Crossing.*** Currently, bicyclists seeking to cross San Antonio Road at Nita Street must use a crosswalk on the west side of Nita Avenue. For bicyclists traveling East from Palo Alto, this is not a problem as the existing crosswalk is on the correct side of the roadway for them. However, for bicyclists traveling West into Palo Alto from Mountain View, they must cross Nita Street and then cross San Antonio against traffic. This problem could be remedied by adding a crosswalk on San Antonio on both sides of San Antonio Road, but we understand that Palo Alto controls this intersection and would therefore be responsible for any improvements.



**Nita onto San Antonio, Right turn only**



**From Nita, must cross San Antonio on Left side only at this time**

***Public Works Feedback.*** BPAC obtained initial feedback from the Traffic Engineering Department of the City regarding the proposed route. Most of their input focused on choosing between the two alternative alignments discussed above. Public Works advised against the Hackett-Wright alignment due to the potential costs and possible issues involved with improving the path South of Shoreline Boulevard to comply with applicable engineering standards and requirements. However, we present the Hackett-Wright alignment as an alternative to be considered by the Transportation Committee.

## CONCLUSIONS AND RECOMMENDATIONS FOR TRANSPORTATION COMMITTEE ACTION

In closing, designating bicycle boulevards in the City can greatly enhance access by bicyclists and can help reduce vehicular traffic by making bicycle trips more pleasant and useful. Although many streets and routes within the City could qualify as a bicycle boulevard, we believe the Mayfield to Downtown route as the City's first bicycle boulevard would prove to be very popular with bicyclists and would serve the regional goal of connecting neighboring cities' bicycle facilities.

We therefore respectfully make the following recommendation to the Transportation Committee for further action.

*Consider establishing a Capital Improvement Program to refine the feasibility study of a "Mayfield to Downtown/Stevens Creek Trail" bicycle boulevard route and to establish design parameters for implementation.*

If a Capital Improvement Program is established, BPAC wants to remain involved to contribute to the design of the project and to be included in the public meeting process.

Mountain View has already received a bronze-level award from the League of American Bicyclists for the excellence of its existing bicycle facilities. BPAC believes that approval and installation of a formal bicycle boulevard would help the City go for the gold.

## REFERENCES

Berkeley bicycle boulevards:

[www.ci.berkeley.ca.us/transportation/Bicycling/BB/BicycleBoulevardNetwork.html](http://www.ci.berkeley.ca.us/transportation/Bicycling/BB/BicycleBoulevardNetwork.html)

Bicycle Technical Guidelines, Valley Transportation Authority, Dated September, 1999

Mountain View Bicycle Transportation Plan, Adopted September 16, 2003

Bicycle Boulevard Study Update, Provided by the Mountain View BPAC to the City Transportation Committee in January, 2004

City of Burbank, Bicycle Master Plan Official Draft Plan Report, September, 2003

Palo Alto Bicycle Transportation Plan:

<http://www.city.palo-alto.ca.us/transportation/bike/trans-plan.html>

City of Portland Design References:

<http://www.portlandtransportation.org/designreferences/bicycle/appendal.htm>, Paragraph C3 on Bicycle Boulevards

2000 Census: <http://en.wikipedia.org> and [www.census.gov](http://www.census.gov)

## Appendix A

### Bike Boulevard Routes Considered

The bicycle boulevard routes listed in this appendix are in the Committee's order of preference.

1. Mayfield to Downtown

Discussed in this Report.

2. The Crossings to Downtown

Route Description

- a. Start at Crossings development on Showers Dr.
- b. Proceed east on Gabriel St. and then north on Ortega Ave.
- c. Proceed east on Leland Ave, crossing Rengstorff Ave. (see comments below)
- d. Continue east on Crisanto Avenue to Escuela and turn right (south)
- e. Turn left (east) on Villa, continue on Villa to downtown

Comments

- a. No access between Leland and Ortega>Showers, right of way would need to be acquired from Caltrain
- b. No signalized crossing at Rengstorff (possible future crossing with Rengstorff grade separation)
- c. Similar access provided by Downtown to San Antonio Shopping Center route
- d. Villa traffic somewhat undesirable

Origins and Destinations served include San Antonio Shopping Center, San Antonio CalTrain Station, Rengstorff Park, Downtown Mountain View, Connection to Palo Alto via the Wilkie Way bike bridge.

3. San Antonio Shopping Center to Downtown

Route Description

- a. Start at San Antonio shopping center, cross Showers Dr. at Latham St.
- b. Proceed east on Latham



- c. Turn left (north) on Chiquita Ave.
- d. Turn right (east) on Mercy St.
- e. Cross Shoreline Blvd. using crosswalk (see comments below)
- f. Continue east on Mercy into downtown

#### Comments

- a. No signalized crossing exists at Mercy and Shoreline Blvd.
- b. Stop signs control Mercy, but not View Street
- c. Stop signs control Mercy, but not Bush Street
- d. Could substitute Latham/Church for Mercy, but this route has more traffic and speed humps between Bush St. and Calderon Ave.

Origins and Destinations served include San Antonio Shopping Center, San Antonio Caltrain station, Castro Park and School, Downtown Mountain View, Stevens Creek Trail.

#### 4. Cuesta Park to Downtown

##### Route Description

- a. Start at Cuesta Park, cross Cuesta Drive at Bonita Ave.
- b. Proceed north on Bonita
- c. Turn right (east) on Hans Ave.
- d. Turn left (north) on Phyllis Ave. (see comments below)
- e. Cross El Camino Real, Phyllis Ave. turns into Calderon
- f. Turn left at Church St., Mercy St., Dana St. or Evelyn Ave. to reach downtown

#### Comments

- a. No signalized crossing to Bonita on Cuesta

Origins and Destinations served include Cuesta Park, Blossom Valley Shopping Center, Downtown Mountain View, and Stevens Creek Trail.

#### 5. Central Expressway to Shoreline Park

##### Route Description

- a. Starting at Central Expressway and Farley St.
- b. Proceed north on Farley
- c. Turn left (west) on Hackett St.
- d. Turn right (north) on Sierra Vista Ave.
- e. Continue on Sierra Vista, crossing Middlefield Rd.
- f. Route terminates at Plymouth Ave. (see comments below)

Comments

- a. Of limited value until Permanente Creek overcrossing completed, permitting access to Shoreline Park

Origins and Destinations served include Crittendon Park, Shoreline Park, Shoreline Ampitheater, and the Century Theaters.

6. Middlefield to Costco/Rengstorff Center

Route Description

- a. Starting at Middlefield Rd. and Independence Ave., proceed north on Independence
- b. Turn right (east) on Leghorn St. or Charleston Rd.

Comments

- a. Utility to cyclists needs further review
- b. Independence is a high traffic volume street

Origins and Destinations served include shopping center at Rengstorff Avenue and Leghorn which contains Costco, Shoreline Park via Rengstorff, shopping center located at Rengstorff Avenue and Middlefield Road.

7. CalTrain station to Cuesta Park

Route Description

- a. Starting at Caltrain Station, cross Evelyn Ave. at Bush St.
- b. Proceed south on Bush
- c. Cross El Camino near Bush (see comments below)
- d. Proceed south on Bonita Ave. to Cuesta Park

Comments

- a. Cuesta Park to Downtown route provides similar access with signalized El Camino crossing
- b. Force vehicular right turns at Evelyn/Bush such that difficult access to Caltrain Station going North and no access to Bush going South
- c. No signalized crossing of El Camino at Bush St.

Origins and Destinations served include the Downtown Transit Center, Downtown Mountain View, Cuesta Park, and the Nob Hill shopping center located at Grant and El Camino.

8. Villa to Raymundo

Route Notes

- a. Starting at intersection of Villa St. and Mountain View Ave.
- b. Proceed south on Mountain View Ave.
- c. Cross El Camino near Mountain View Ave. (see comments)
- d. Proceed south on Mountain View Ave. to Raymundo near Los Altos border

Comments

- a. Destination/Origins unclear
- b. Alternative routes have good bike lanes
- c. Forced right turn from Mountain View Ave. at California St.
- d. No signalized crossing at El Camino

Origins and Destinations served include San Antonio shopping center, San Antonio Caltrain Station, and Downtown Mountain View.

## APPENDIX B

### PALO ALTO BRYANT STREET BICYCLE BOULEVARD

The Bryant Street Bike Boulevard may be the most well known bike boulevard in the country. It is often held up as an example that defines “bike boulevard.” The boulevard incorporates key elements in that

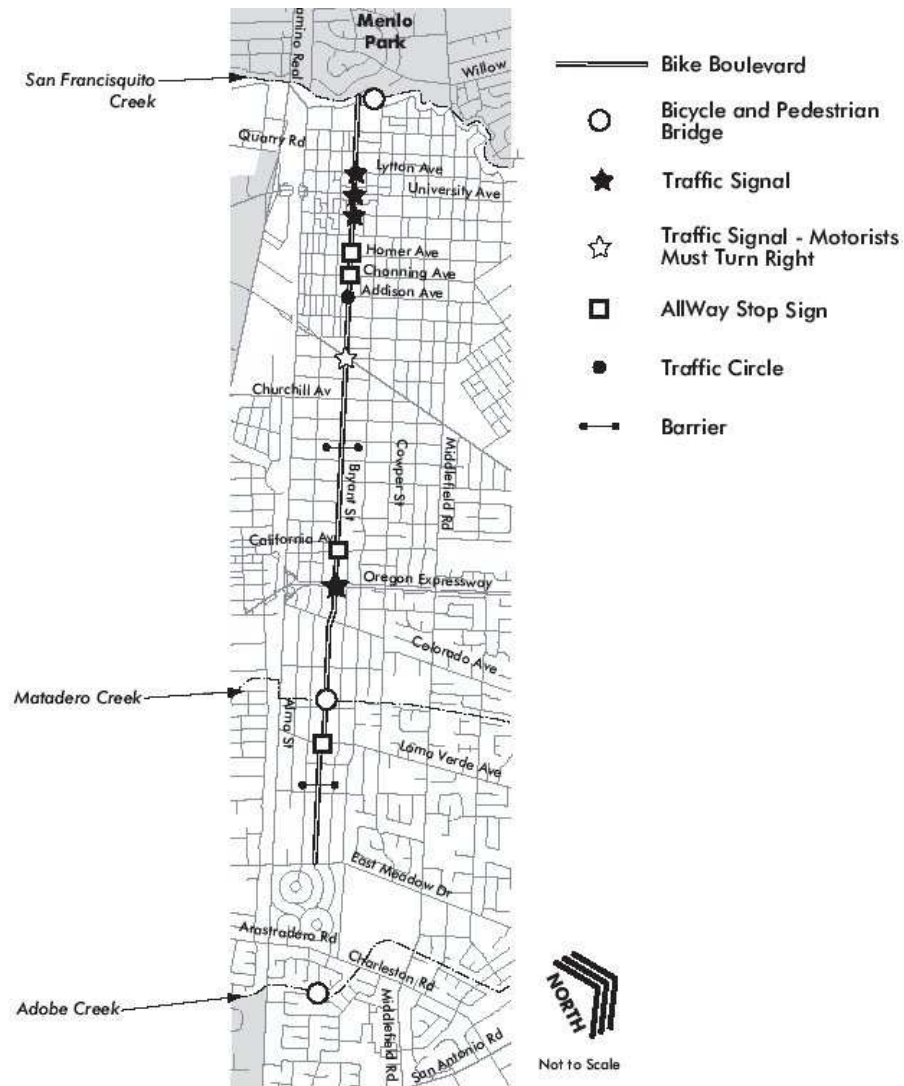
- It runs parallel to arterials that carry significant automobile traffic (Alma and Middlefield);
- Bryant Street is straight and provides a direct route across town;
- It has a light automobile traffic volume;
- It includes barriers that discourage automobile traffic, including at the intersection of Bryant and Embarcadero;
- It even orients some stop signs to permit a clear passage to bikes while traffic on crossing residential streets is halted.

The boulevard extends over 3 miles through Palo Alto. Near the Mountain View border the boulevard becomes a signed Bike Route that makes multiple turns and follows residential streets as shown in the highlighted map at the right. The Palo Alto Bicycle Transportation Plan recommends upgrading the signage along this bike route segment. A preferred safe route near the San Antonio Road and the Palo Alto / Mountain View border is not well-defined.



**Palo Alto bike route connection to Mountain View**

The following map, taken from the Palo Alto Bicycle Transportation Plan, details the Palo Alto Bryant Street Bike Boulevard. Please note the markers for significant intersections and traffic indicators along the route.



**Palo Alto Bryant Street Bike Boulevard Map**